

REMARKS

Applicant respectfully requests reconsideration of the subject application in view of the amendments and remarks set forth herein.

1. Issues Addressed in Previous Submission

Applicant notes with appreciation that the Examiner has withdrawn rejections advanced in the previous Office Action dated July 26, 2005, including specifically:

- Double patenting rejection of claims 1-4, 7, 9 and 14-27 in view of Terminal Disclaimer;
- Section 112 rejections of claims 1-21;
- Section 102 rejection of claims 24-27 based on U.S. Patent No. 4,543,281 to Pedersen et al. (the “Pedersen ‘281 patent”);
- Section 102 rejection of claims 1-2, 4-6, 9, 17-18 and 22-27 based on U.S. Patent No. 3,973,397 to Chase et al. (the “Chase ‘397 patent”);
- Section 103 rejections of claims 9, 14-16, 19-21, 23 and 27 on various grounds.

2. Claim Amendments

Applicant has canceled dependent claims 3 and 4, without prejudice. Applicant has also amended independent claims 1, 22 and 24 to more precisely define the presently claimed subject matter. In particular, applicant notes that the independent claims have been amended to positively recite a “flight data recorder”. Support for the claim amendments is found in the specification, as filed (see, e.g., page 27, line 12 et seq.). In addition, independent claims 1, 22 and 24 have been amended to recite that “irreversible decomposition of the hydroxide forms a thermal insulation oxide layer around the flight data recorder.” Support for these amendments is also found in the specification, as filed (see, e.g., page 28, lines 13-17). Applicant respectfully submits that no new matter is introduced by way of the foregoing claim amendments. Prompt entry of the proposed claim amendments is respectfully requested.

3. Section 112 Rejection

Applicant notes the Section 112 issues raised in the outstanding Office Action with respect to dependent claim 4. Applicant respectfully submits that the outstanding rejection under Section 112 is obviated herein by the cancellation of claim 4. Reconsideration and withdrawal of the outstanding Section 112 rejection are respectfully requested.

4. Section 102 Rejections

The outstanding Office Action sets forth two (2) rejections under 35 USC §102, as follows:

- Claims 1-13, 20 and 22-23 are rejected under 35 USC §102(b) based on the Pedersen '281 patent; and
- Claims 1-9, 20, 22-24 and 26-27 are rejected under 35 USC §102(e) based on U.S. Patent No. 5,804,294 to Gregg et al. (the "Gregg '294 patent").

Each of the foregoing Section 102 rejections is addressed in turn.

A. Rejection based on Pedersen '281 Patent

As noted in the previous Amendment and Response, the Pedersen '281 patent is directed to a fire or flame barrier. The disclosed barrier is a "highly filled polymer based composite, the principal components of which are an ethylene copolymer, aluminum hydroxide, i.e. $\text{Al}(\text{OH})_3$ and calcium carbonate. This fire or flame barrier material is, as extruded or molded, or coated at ambient temperature a solid having well defined physical and chemical properties." [Pedersen '281 patent, col. 2, lines 12-15.] The Pedersen '281 patent further discloses that the fire or flame barrier material is advantageous because:

- (1) When heated to certain elevated temperatures, foaming and an endothermic reaction occur. One of the by-products of this endothermic reaction is water which, in the course of evaporating, delays the heat rise at the heat exposed surface and acts as a foaming agent; and
- (2) the material of the present invention, when directly exposed to elevated temperatures is transformed into an intumescent polymeric foam like layer having a firm, ceramic-like structure. This intumescent layer shields the remaining non-exposed portion of the thermoprotective material and has

good heat insulating properties at temperatures up to 2300°F and higher.
[Pedersen '281 patent, col. 1, lines 40-53.]

Applicant respectfully submits that each of applicant's independent claims, i.e., claims 1, 22 and 24, as amended, patentably distinguish over the Pedersen '281 patent because, *inter alia*, the Pedersen '281 patent fails to teach or suggest the potential utility of hydroxides as a heat absorption material in connection with a flight data recorder. Rather, the Pedersen '281 patent contemplates conventional industrial applications, as outlined at col. 3, lines 40-68. There is nothing in the teachings of the Pedersen '281 patent that would motivate a skilled artisan to contemplate the use of hydroxides as a heat absorption material for flight data recorders, wherein decomposition of the hydroxide would provide advantageous heat absorption functionalities at the elevated temperatures potentially encountered thereby. Indeed, the composite systems that are disclosed in the Pedersen '281 patent are intended to function as a fire/flame barrier, a distinct issue relative to protecting the electronics of a flight data recorder from potential heat damage. Thus, a skilled artisan would not be motivated to arrive at the advantageous articles of manufacture disclosed and claimed herein, absent applicant's teaching thereof.

In addition, applicant respectfully submits that the Pedersen '281 patent fails to teach or suggest an article of manufacture that forms a thermal insulation oxide layer around a flight data recorder based on irreversible decomposition of an hydroxide. To the contrary, the Pedersen '281 patent teaches that "an intumescent polymeric foam like layer having a firm, ceramic-like structure" is formed *in situ*. Formation of an oxide insulating layer according to applicant's presently claimed invention advantageously further abates temperature rise of the flight data recorder positioned therewithin.

For at least the foregoing reasons, applicant respectfully requests reconsideration and withdrawal of the outstanding Section 102 rejection of independent claims 1, 22 and 24, as amended. In addition, dependent claims 2, 5-13, 20 and 23 – which depend directly or indirectly from independent claims 1 and 22 – patentably distinguish over the Pedersen

'281 patent for at least the reasons noted herein with respect to independent claims 1 and 22. Accordingly, reconsideration and withdrawal of the outstanding Section 102 rejection of such claims based on the Pedersen '281 patent are also respectfully requested.

B. Rejection based on Gregg '294 Patent

As noted above, claims 1-9, 20, 22-24 and 26-27 stand rejected under 35 USC §102(e) based on the Gregg '294 patent. Applicant's traverse the outstanding rejection based on the Gregg '294 patent herein, but reserve the right to seek to challenge the prior art status of the Gregg '294 patent should a rejection based thereon be maintained in a future Patent Office communication.

The Gregg '294 patent is directed to microporous insulation materials of specific compositional form. Independent claim 1 is representative of the insulation materials contemplated by the Gregg '294 patent:

1. A microporous insulation material comprising, in weight percent based upon the dry weight of the microporous insulation material:
 - (a) 20-60 wt % inorganic particulate material;
 - (b) 10-60 wt % endothermic compound;
 - (c) 5-20 wt % opacifier;
 - (d) 3-15 wt % inorganic fiber;
 - (e) 0-6 wt % dry resin binder; and
 50-89 wt % being said inorganic particulate material and said endothermic compounds, said inorganic particulate material being a different substance than said endothermic compound.

Alternative compositions are disclosed and claimed in the Gregg '294 patent (see, e.g., claims 4, 19 and 23). However, as is readily apparent from the teachings of the Gregg '294 patent, the overall compositions of the Gregg '294 patent are such that a "thermal insulation oxide layer" will not be formed around a flight data according to the Gregg '294 patent. For at least this reason, applicant respectfully submits that independent claims 1, 22 and 24, as amended, patentably distinguish over the Gregg '294 patent. In addition, dependent claims 2-9, 20, 23 and 26-27 – which depend directly or indirectly from independent claims 1, 22 and 24 – patentably distinguish over the Gregg '294 patent for at

least the reason noted herein with respect to independent claims 1, 22 and 24.

Accordingly, reconsideration and withdrawal of the outstanding Section 102 rejection of such claims based on the Gregg '294 patent are also respectfully requested.

5. Section 103 Rejections

The outstanding Office Action sets forth six (6) rejections under 35 USC §103(a), as follows:

- Claims 1-13, 20, 22-24 and 26-27 stand rejected under 35 USC §103(a) based on U.S. Patent No. 5,370,814 to Salyer (the "Salyer '814 patent" in view of the Pedersen '281 patent;
- Claims 9, 17-19, 23 and 27 stand rejected under 35 USC §103(a) based on the Salyer '814 patent and the Pedersen '281 patent, further in view of U.S. Patent No. 5,453,453 to Lamon et al. (the "Lamon '453 patent");
- Claims 9, 14-16, 23 and 27 stand rejected under 35 USC §103(a) based on the Salyer '814 patent and the Pedersen '281 patent, further in view of the Lamon '453 patent and U.S. Patent No. 4,421,661 to Claar et al. (the "Claar '661 patent");
- Claims 9, 21, 23 and 27 stand rejected under 35 USC §103(a) based on the Salyer '814 patent and the Pedersen '281 patent, further in view of the Lamon '453 patent and U.S. Patent No. 5,167,876 to Lem et al. (the "Lem '876 patent");
- Claims 9, 17-19 and 23 stand rejected under 35 USC §103(a) based on the Pedersen '281 patent in view of the Lamon '453 patent;
- Claims 9, 14-16 and 23 stand rejected under 35 USC §103(a) based on the Pedersen '281 patent in view of the Lamon '453 patent and the Claar '661 patent; and

- Claims 9, 21 and 23 stand rejected under 35 USC §103(a) based on the Pedersen '281 patent in view of the Lamon '453 patent and the Lem '876 patent.

Reconsideration of the foregoing Section 103 rejections is respectfully requested.

Applicant notes that the various secondary references are generally relied upon by the Examiner to address specific hydroxide materials. Applicant further notes that only the initial obviousness rejection is directed to applicant's independent claims, i.e., claims 1, 24 and 26. With reference thereto, applicant respectfully submits that the proposed combination of the Salyer '814 patent and the Pedersen '281 patent fails to teach or suggest applicant's claimed article of manufacture/combination, which recite, *inter alia*, a flight data recorder, a hydroxide in an amount sufficient ... to protect the electronics within the flight data recorder from damage, wherein the hydroxide effects the desired level of heat absorption at least in part based on an irreversible decomposition of the hydroxide; and the irreversible decomposition of the hydroxide forms a thermal insulation oxide layer around the flight data recorder. The proposed combination clearly lacks any teaching or suggestion that a desirable thermal insulation oxide layer may be advantageously formed to further abate a temperature rise within the flight data recorder. For at least this reason, applicant respectfully submits that applicant's independent claims 1, 24 and 26, as amended, patentably distinguish over the proposed Salyer/Pedersen combination. Claims 2-13, 20, 22-23 and 27, which depend directly or indirectly from the noted independent claims, are patentably for at least the reasons noted with respect to such independent claims. Reconsideration and withdrawal of the obviousness rejections based on the Salyer/Pedersen combination are respectfully requested.

Applicant has previously noted the teachings of the various secondary references relied upon in the remaining obviousness rejections. Applicant respectfully submits that none of these additional secondary references, whether taken alone or in combination with each other or with the primary references (i.e., the Salyer '814 patent and/or the Pedersen

'281 patent), teaches or suggests applicant's claimed article/combination, which include a flight data recorder, a hydroxide in an amount sufficient ... to protect the electronics within the flight data recorder from damage, wherein the hydroxide effects the desired level of heat absorption at least in part based on an irreversible decomposition of the hydroxide; and the irreversible decomposition of the hydroxide forms a thermal insulation oxide layer around the flight data recorder. Accordingly, applicant respectfully submits that the foregoing Section 103 rejections – which are directed to applicant's dependent claims – should be reconsidered and withdrawn because applicant's various dependent claims patentably distinguish over the art of record for at least the reasons noted with respect to independent claims 1, 22 and 24, as amended. Reconsideration and withdrawal of the Section 103 rejections are respectfully requested.

Applicant respectfully submits that all claims are in condition for allowance. Prompt action leading to an early Notice to this effect is earnestly solicited. If the Examiner believes that a telephone conversation may be useful in advancing prosecution of this application, he is invited to contact applicant's attorney at the number set forth below.

Respectfully submitted,



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